Tilburg University

Network neutrality

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Published in:
Trade governance in the digital age

Publication date:
2011

Document Version
Peer reviewed version

[Link to publication in Tilburg University Research Portal](#)

Citation for published version (APA):
Larouche, P. (2011). Network neutrality: The global dimension. In M. Burri (Ed.), *Trade governance in the digital age* (pp. 1-15). CUP.

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NETWORK NEUTRALITY: THE GLOBAL DIMENSION

Pierre Larouche*

This paper first sets out a framework for understanding network neutrality, by organizing the various issues raised in the course of the network neutrality debate. Secondly, recent US legal and regulatory initiatives are briefly reviewed. Thirdly, the situation under EU law is surveyed. Finally, the conclusion compares the two regulatory responses and considers how the global network neutrality debate could unfold.

In the short term, ISPs must take measures to deal with imbalances and congestion on their networks. Beyond that, in the longer term, ISPs are looking to introduce differentiated Quality of Service (QoS) offerings, so as to turn their services to a two-sided platform. The most fundamental policy concern within ‘network neutrality’ is *whether differentiated QoS should be allowed at all*. Economic arguments point to benefits, as well as potential risks. However, depending on how it is implemented, differentiated QoS could lead to market fragmentation, where largely standardized IP-based offerings would be replaced by primarily national platforms. *Market power* concerns also arise, most significantly at the ISP level. Vis-à-vis users, the ability of users to switch to another ISP acts as a brake on any abuse on the part of the ISP. Vis-à-vis content providers, the ISP is in a position similar to that of a terminating operator, but this analogy is imperfect. There is a widespread concern in the literature that an ISP with market power could integrate vertically and then engage into discrimination against, or even blocking of traffic from, non-affiliated content providers.

In its *Open Internet Order* of December 2010, the US FCC found that differentiated QoS is undesirable, towards content providers except if it can be brought within an exception (reasonable network management, specialized services). Mobile ISPs also have greater leeway to discriminate than fixed ISPs. Despite its efforts to rely on economic analysis, the FCC is mired in technological categories.

In the EU, the European Commission has adopted a different policy line so far, whereby the introduction of differentiated QoS is possible, within some safeguards and subject to the application of EU competition law. The Commission relies on economic analysis and remains technology neutral, in line with EU communications policy.

At the global level, it must be expected that different local market situations and policy preferences will lead to divergence on network neutrality. While divergence is not harmful as such, in the case of network neutrality spillovers could arise, and global market fragmentation could occur.

Keywords: network neutrality, open internet, telecommunications regulation, antitrust/competition law, FCC, discrimination, blocking

JEL codes: K21, K23, L41, L96

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NETWORK NEUTRALITY: THE GLOBAL DIMENSION

Network neutrality has been high on the policy and academic agenda in the USA for the better part of this century. The debate crossed over to Europe around 2006. In the course of the review of the EU electronic communications regulatory framework, in 2007-2009, many commentators cautioned against holding a mere repeat of the US battle in the EU. The EU is now finding its own way. Very soon the debate will take a global turn, as other jurisdictions join the fray. This contribution first sets out a framework for understanding network neutrality, by organizing the various issues raised in the course of the network neutrality debate (1). Secondly, recent US legal and regulatory initiatives are briefly reviewed (2). Thirdly, the situation under EU law is surveyed (3). Finally, the conclusion compares the two regulatory responses and considers how the global network neutrality debate could unfold (4).

1. NETWORK NEUTRALITY AS A CLUSTER OF ISSUES

The ‘network neutrality’ moniker has some advantages, but it also affects the thrust of the discussion. First of all, it creates an illusion of unity among a number of disparate questions and oversimplifies the debate into a battle between proponents and opponents of ‘network neutrality’. Secondly, it isolates the discussion from broader social and economic issues and turns it into what seems like an Internet-specific technological confrontation.

This author takes issue with both trends. Network neutrality is but a convenient label; if a serious public policy discussion is to be held, then the various issues brought under network neutrality must be kept in mind throughout the analysis. Accordingly, the result will likely be more nuanced and complex than many participants in the debate would like. Furthermore, history did not start with the Internet, and the Internet does not operate outside of society, the economy and law.

Let us begin by taking apart the network neutrality cluster. The one red line running through the whole cluster is that the providers of broadband access to the Internet – hereinafter the ISPs¹ – are seeking to change their role and their operations. Beyond that, at the outset, two broad issues must be distinguished:

- (i) Shorter-term *network management* issues. ISPs are experiencing traffic imbalances and congestion on their respective networks because of the growth in capacity requirements from users (at least from some users). At the same time, ISPs are also facing calls for them to exert greater control over the traffic they carry;
- (ii) Longer-term issues about the way Internet traffic is routed and transmitted, with a possible evolution away from the current best-efforts model towards *differentiated Quality of Service (QoS)* offerings from ISPs.

¹ We use ISP (Internet Service Provider) because it is the most commonly-used term even though its meaning has evolved since the early days of the Internet. ISP now stands for a class of firms which includes the traditional telecommunications operators providing broadband over ADSL or fibre, the cable TV operators providing broadband over cable, as well as mobile communications operators providing access over 3G technology and other operators (satellite, etc.).

This distinction between shorter- and longer-term issues is key, since even if network management continues to follow the best-efforts model, the shorter-term issues remain and need to be addressed.

1.1. Shorter-term network management issues

Most ISPs have observed the following usage patterns on their network: a small fraction of users (usually less than 10%) accounts for a disproportionate amount of traffic (usually more than 80%).

A number of factors contribute to this, including the rise of peer-to-peer (P2P) networking and concomitant applications, but also the popularity of online games (MMORPGs and others) and the growth in the distribution of high-quality video over the Internet. Such usage patterns can negatively affect the quality of operations of the ISP and the experience of other users, and accordingly ISPs have been trying to find ways to keep usage patterns in check.

A possible remedy is to charge high-traffic users more, or to impose volume limits on traffic so as to catch such users,² but that is not always commercially feasible. Other measures of a more technical nature are also available: they imply that ISPs look more closely into the content of the data packets they are carrying,³ in order to impose a differential treatment on the traffic streams which are thought to create network management problems. For instance, the transit of such traffic streams can be delayed in order not to affect traffic from other users or it can be blocked altogether.

The problem with such technical measures is that they are hard to target accurately, and they can have an impact on the functioning of the market. Such was the case in the USA when Madison River cut off Voice-over-IP traffic or Comcast hampered P2P traffic. In both situations, while the ISP claimed to be responding to network management issues, the actions of the ISP also adversely affected actual or potential rivals in the provision of voice communications (Madison River) or content (Comcast). These two cases fed the calls for intervention on ‘network neutrality’, but one should be careful not to overreact. Similarly, the recent Dutch legislation on network neutrality was a direct reaction to a decision by one of the large mobile ISPs (KPN) to block a third-party application intended to offer free SMS (texting) services.⁴

As the above examples show, shorter-term management issues faced by ISPs can be used as an excuse for anti-competitive behaviour, in particular to exclude rivals on upstream markets (for content, applications or services) from access to the customers of an ISP. At first sight, in order to remedy this concern, it might be sufficient to restrict ISPs to pricing and usage limits and to prevent them from having recourse to technical measures. Yet this would not be consistent with trends elsewhere in policy and in the law, whereby ISPs are increasingly called upon to police traffic on their

² I.e. set the traffic limit (in terms of GBs per month, for instance) at such a level that the vast majority of users will not reach it.

³ To the extent that this is legally feasible.

⁴ See the new Section 7.4a to be added to the Telecommunications Act (*Telecommunicatiewet*) by the Act to amend the Telecommunications Act to implement the revised telecommunications directives, *Kamerstukken* 32549 A, available at www.wetten.nl.

networks, by way of what is called Deep Packet Inspection. Such policing takes place not just in support of criminal law enforcement, but also, and increasingly, in order to protect intellectual property. A pre-eminent example thereof is the controversial French ‘three-strikes’ law, whereby ISPs are conscripted in fight against piracy.⁵

1.2. Longer-term issues: differentiated Quality-of-Service (QoS)

In the longer term, other issues arise.

First of all, demand for bandwidth-hungry content, services or applications⁶ with exacting quality requirements – high-definition video-on-demand, gaming, telemedicine, videoconferencing – will increase, and content providers are ready to offer such content.

From the side of content providers, questions arise as to whether the current best-efforts routing model can adequately support such content. ISPs must have the right incentives to invest in their networks in order to deliver on the requirements of users and content providers. However, broadband Internet access is on its way to becoming a commodity product, with decreasing prices (monthly rates with high or no usage limits having become the norm) for increasing bandwidth and speed. In principle, customers welcome this development, at least from a static perspective; yet over time, ISPs are challenged to find the income streams required to carry out the investments needed to meet the quality requirements of customers and content providers.⁷

Among the solutions to escape this conundrum,⁸ ISPs can pursue a strategy of horizontal differentiation and turn their services from a mere conduit for content to a two-sided platform, i.e. a platform where content providers and users can interact. In order to do so, the ISP must offer a service which stands out from standard traffic conveyance and attracts users and content providers to its ‘platform’. Hence the idea of endowing the ISP’s network with certain features which make it stand from the rest, i.e. offering a level of Quality of Service (QoS) going beyond best-efforts by including prioritization (which in turn will influence more technical aspects such as latency or jitter).

Since this is a longer-term development, it is still quite unclear how it will unfold technically and commercially. Nevertheless, in order to ascertain whether it should be viewed with concern, it is necessary to sketch the implications of this development, which also implies an examination of its technical feasibility.

1.2.1. *Static analysis*

⁵ See Act 2009-669 of 13 June 2009 fostering the distribution and protection of creative works on the Internet (*Loi 2009-669 du 12 juin 2009 favorisant la diffusion et la protection de la création sur internet*) JORF n° 135, p. 9666 (13 June 2009), also known as “Loi Hadopi”; following a partial invalidation by the French Constitutional Council, the Act was amended by Act 2009-1311 of 28 October 2009, JORF n° 251, p. 18290 (29 October 2009).

⁶ Hereafter collectively referred to collectively as ‘content’ for the sake of simplicity.

⁷ The costliest part of such investment programmes is the roll-out of fiber optic into the access network, be it all the way to the curb (FTTC) or even into individual homes (FTTH).

⁸ Other solutions include expanding revenue per customer by selling product bundles – triple play, quadruple play – or introducing new ancillary services, which typically brings ISPs to integrate vertically and compete with content providers.

As set out above, the ability of ISPs to charge appropriately for services is crucial for their incentives to carry out the very large investment programmes needed in order to take fibre closer to the home, and to provide business and residential customers with the high-speed broadband services which are essential for the knowledge economy.

From the perspective of standard economic analysis, we can say that tailoring quality of service provided in a competitive environment more closely to the needs of each user is likely to improve welfare, and should also improve the incentives of ISPs to invest to meet customer demand.⁹

The simplest case is one where the characteristics of certain data flows necessitate delivery of information to a specified standard. Thus an e-mail can normally be delayed for a few seconds without disaster. But a voice conversation has to have a beginning, a middle and an end, in that order, as does streamed video. It would be absurd to prohibit different charges for services with different requirements, as doing so could eliminate the possibility of certain services being provided altogether.

Now consider another case: a particular end user needs e-mails delivered instantaneously, while other end-users are prepared to wait. Is it wrong to charge more for an express service, which imposes more cost on the network? To the contrary, failing to do so may cause the express service to fail to appear altogether, as everyone might sign up for it if it were free.

In this respect, the Internet is similar to other content delivery networks, such as the postal network, or to transport networks (in particular rail and road networks). On these networks, it is possible to offer differentiated QoS (faster lanes, priority, express delivery, etc.), and there is general agreement that such differentiated QoS improves welfare.

There is, however, an important additional complication, arising from the fact that broadband access is a two-sided market. ISPs can in principle attract payments from either, or both, end-users and content providers. They may also pay content providers to come onto their platform, possibly on an exclusive basis, in order to make themselves more attractive to end-users.

Two-sided markets do not obey conventional views about efficient pricing.¹⁰ For example, parties imposing the same costs of providing a service need not pay the same prices if they are on different sides of the market, and for that reason have different externality effects.

As a general rule, in two-sided markets, the benefit that one side of the market obtains from access to the other side is directly related to the number of parties accessible on the other side. This makes a content provider value a platform on the basis of how

⁹ In the economic literature, the consensus seems to be squarely in favour of allowing price and quality differentiation. There are exceptions, however, most prominently exemplified by N Economides 'Broadband openness rules are fully justified by economic research', Working paper 10-02, www.NETinst.org. In this paper, the work is mainly done on the assumption of limited network competition. For an overall review of the economic literature on net neutrality, see F Schuett, 'Network neutrality: a survey of the economic literature,' Review of Network Economics, 9(2) 2010.

¹⁰ See OECD, *Two-Sided Markets*, Roundtable on Competition Policy, DAF/COMP(2009)20 (2009).

many end-users it would have access to through that platform, and a platform to value content on the basis of how many end users it can attract to the platform by providing that content. This is shown very clearly in ‘old’ media markets where a cable or satellite network will charge some channels for carriage, while it will pay others to come onto its network.

1.2.2. *Dynamic perspective and innovation*

The above discussion was made from a static perspective. Some general *a priori* arguments have been made about the links between the current status of the internet and the encouragement of innovation.¹¹ It is possible that moving away from the current best-efforts model could change the pattern of innovation on and around the Internet, in ways that are hard to predict. Without doubt, under the current best-efforts model, with the end-to-end principle, the Internet has been a hotbed of innovation. Whether and, if so, how strong a causal link exists between this model and innovation remains unknown, however. After all, the current model was not designed and chosen with a view to maximize innovation: rather, it was the product of US regulatory constraints at the time, as much as anything else.¹²

With competitive markets for content and for access, it is difficult to predict whether regulatory constraints on the development of new services will foster innovation or rather impair it.

It is thus important not to pre-empt the market by telling ISPs how to carry on their business before the risks are known. In other words, at such an early stage, legislative intervention should be limited to clear and identifiable risks that are not otherwise addressed by current laws and regulations. In any event, should the introduction of differentiated QoS lead to undesirable outcomes, it should be possible to intervene to revert to best-efforts (or another model) later on: the technical changes involved are limited.¹³

As a matter of regulatory policy, there should be a strong case for intervening in such a radical way as to prohibit the introduction of differentiated QoS offerings. At this point in time, that case has not been made.¹⁴

1.2.3. *Implementation of differentiated QoS and market fragmentation*

This is not to say that the introduction of differentiated QoS is not fraught with risks. The main one, in fact, has so far been overlooked in the discussion, most likely

¹¹ For an anti-net neutrality view, see, for example, Christopher Yoo, ‘Network neutrality, consumers and innovation’, University of Chicago Legal Forum, 25, 2008, pp 179-262.

¹² Following the *Computer* inquiries, the FCC had found that the AT&T monopoly did encompass the transmission of data without any processing or ‘basic services’, but did not extend to ‘enhanced services’ (‘information services’ under the Telecommunications Act 1996) whereby data was processed. The best-efforts model and the end-to-end principle are moulded around these constraints, in order to create a competitive space around data transmission.

¹³ In fact, the main problem with a subsequent intervention to regulate QoS over the Internet would rather be to change mentalities and expectations, once market players and customers get used to differentiated QoS offerings.

¹⁴ It is worth noting that Ofcom has reached the same conclusion in its discussion document Traffic Management and ‘net neutrality’ (2010).

because it is still too influenced by US debates. It concerns market fragmentation (for instance, within the EU internal market) more so than competition.

1.2.3.1. Technical implementation of differentiated QoS

At this stage, it is unclear how differentiated QoS would work technically. As we know, the Internet is in fact a network of networks, and the best-efforts model is probably the easiest way to manage the routing of traffic across these networks.

So far, the history of QoS over the Internet is rather patchy. Some services aiming at improving the QoS are already available. Virtual Private Networks (VPNs), for instance, represent a break from “neutrality”, although they are not used primarily for prioritisation or QoS reasons. Another “better than best-effort” service is currently offered in the form of caching content on servers closer to customers, which can thus be served more quickly and efficiently. At applications level, buffering for audio and video streaming is another example of improving QoS: audio and video files can avoid jitter by downloading every frame few seconds before showing it.

More to the point, prioritization has been trialled with certain protocols such as Diffserv, IntServ and others, which have been developed to treat content in a differentiated way. However, they require a lot of coordination to work with a multi-network environment. For the time being they only work well when applied to a small number of networks under the same administrator.¹⁵ The experience with DiffServ and other protocols points to the major obstacle to implementing differentiated QoS in practice, namely coordination between the various ISPs and network operators through whose facilities traffic must pass.

1.2.3.2. The need for end-to-end QoS offerings and the coordination problem

Yet differentiated QoS only makes sense as a commercial proposition if it can be offered *end-to-end*, i.e. if the traffic is prioritised in the same fashion throughout the whole of its transmission between, say, the content provider and the end-user.

ISPs can prioritise “premium” packets and slow down lower-priority packets only on those parts of the transmission over which they exert control.¹⁶ For the rest, they are dependent on their fellow providers (with whom they also compete for customers).

We find here a classical *coordination* problem, but the players have complex incentive patterns. Existing literature concerns mostly interconnection: interconnecting networks is mutually beneficial to the customers of both operators,¹⁷ without obvious drawbacks for these customers (given the internalisation of network externalities) other than the cost of the facilities used to provide interconnection.

¹⁵ See the article by Andy Oram “The Network Neutrality Debate: When the Best Effort Is Not Good Enough” at

http://www.praxagora.com/andyo/ar/network_neutrality_best_effort.html, 28 June 2006.

¹⁶ This is consistent with the fact mentioned above that protocols such as Diffserv only work well when the few networks involved in content management are controlled by the same administrator.

¹⁷ Assuming networks of comparable sizes.

Accordingly, operators generally have an incentive to interconnect with their competitors.¹⁸

Prioritization differs from interconnection in one important respect, however: it is rival. When an ISP cooperates with another ISP to achieve end-to-end QoS levels for their respective customers, it is conferring benefits to customers of a competitor, potentially at the expense of one's own customers. In simple terms, if top-level QoS is to have some value, not everyone can enjoy top-level QoS. Just as we cannot all have an above-average income, so the customers of all ISPs cannot all be at the head of the delivery queue.

The coordination problem is compounded by a further difficulty: differentiated QoS can be applied to both ends of the communication. An ISP may of course charge its subscribers (end-users) for priority and QoS, so that they can have a more enjoyable experience. Similarly, a content provider may be charged for differentiated QoS as well. The preferences of the two ends must then be reconciled. If an end-user pays for the highest QoS level in order to access relatively small content providers who have chosen for a lower QoS level, the result might not meet expectations. If the same end-user rather wants to access large content providers which have purchased gold-plated QoS in any event, perhaps overcharging has taken place.

1.2.3.3. Possible scenarios to address the coordination problem

Given this coordination problem, the following scenarios are possible:

Scenario 1. Dissolving the cloud single-handedly. A first option is to seek to exert control over the whole of the transmission process, i.e. dissolving the “cloud”. For instance, if a single ISP deals with both the content provider and the end-user, chances are that it can offer an end-to-end path over its own facilities, over which it can of course implement differentiated QoS. This solution seems quite at odds with the nature of the Internet as a public network, and it is actually outside the Internet as we know it. If ISPs pursue this avenue, then in fact they are building (or slicing off) a series of “special Internets” (or “managed services”) for their premium customers, leaving perhaps a small “traditional” Internet for the rest.

Scenario 2. Forming a coalition to dissolve the cloud. If it is not possible for a single firm to exert end-to-end control, then ISPs must cooperate, via agreements. In a simple two-firm, two-customer model as outlined above, there might not be much incentive to cooperate, but in an environment with more firms, it might be tempting for a number of them to pool their resources so as to be able to offer end-to-end QoS guarantees to their customers, knowing that this gives them an advantage over other competitors. Here also, this implies creating a sort of “private network” besides the Internet.

¹⁸ Nevertheless, interconnection arrangements for Internet traffic are moving away from the original peering model (exchange of traffic without any compensation). Increasingly one finds transit agreements where a fee is paid for the transmission of Internet traffic. A number of factors come into play when assessing whether two parties should peer or rather conclude an agreement whereby a fee is exchanged: the balance in traffic flows, the spillover effects (network effects in a two-sided platform) which may compensate for traffic imbalances, and the cost of monitoring traffic flows in order to determine compensation.

Scenario 3. Pretending that the cloud is dissolved. If neither of the previous two scenarios materialises, the coordination problem remains unsolved, and ISPs are promising something they cannot in fact deliver. They can only degrade service for those who do not pay for priority every time their content happens to pass through the realm where the ISP exerts control over routing. QoS charges are then akin to termination fees. As some have pointed out, such a course of conduct smacks of extortion.

1.3. Market power issues

In addition to the desirability of differentiated QoS in general, there are a number of more specific issues relating to the possible presence of market power.

In a nutshell, without wanting to conduct a detailed relevant market analysis, network neutrality can be brought back to a vertical relationship between content providers and ISPs, taking into account the fact that the ISP services are or can be a two-sided platform between content providers and end-users. Market power could arise either at the level of content provision or at the ISP level.

1.3.1. Presence of market power at the content provision level

At the content provision level, market power could arise for the provision of various types of content (or applications or services), so that the content in question would qualify as a “must-have”. For instance, it is hard to imagine an ISP not offering access to Google. Yet market power at the content level does not usually rest on a structural advantage such as a bottleneck. Typically it relies on intellectual property (in respect of which competition law is the first port of call).

1.3.2. Presence of market power at the ISP level

1.3.2.1 Market power vis-à-vis users

At the ISP level, market power can arise because the ISP controls traffic to and from its end-users. Indeed, at any given location and point in time, an end-user depends on an ISP – to which it is linked – to exchange traffic on Internet. This might be the cable or ADSL provider from which one procures broadband access, the mobile operator to whose services one subscribes or even a wi-fi hotspot operator to whose network one is connected. Traffic between the Internet and the specific device one is using is routed through that ISP and through that ISP only.

From the end-user/customer perspective, the ability to switch from one ISP to the other acts as a check on the ISP developing significant market power. Switching can occur not only between ISPs directly competing with one another (e.g. between DSL- and cable-based ISPs, or between mobile operators), but also between a fixed-line ISP (DSL- or cable-based) and a mobile operator, albeit in the latter case the services are not entirely substitutable.¹⁹ As always, for suppliers to be disciplined, it is not necessary for all customers to switch, but a sufficient number must be prepared to switch make it unprofitable for the ISP to raise prices (or otherwise adversely change

¹⁹ Bandwidth, speed and – obviously – mobility differentiate fixed-line from mobile broadband access.

its terms and conditions of service).

1.3.2.2. Market power vis-à-vis content providers

Market power can also be felt in the other direction, however. For the content provider, the end-user can only be reached via whichever ISP the end-user is connected to. The content provider is not necessarily in a direct relationship with the end-user's ISP,²⁰ and furthermore, the content provider cannot influence²¹ the end-user's choice of ISP. In that sense, the ISP could find itself in a similar position to the fixed or mobile voice operator on the termination market: the competitive analysis in recent years has coalesced around the approach that each termination network operator finds itself in a separate relevant market as regards its own network, implying that the operator holds significant market power as regards termination.

Yet one should not rush to conclude by analogy that ISPs hold significant market power towards content providers because they control access to their end-users. Whereas for fixed and mobile telephony end-users are genuinely reachable only via their operator, Internet traffic can reach the end-user via many different routes: end-users might have a cable/DSL subscription at home, a 3G subscription with access to the Internet via their smartphone, access to the Internet at work via their office network, plus sporadic access via a wi-fi hotspot. These access routes are not equivalent or interchangeable from a content provider's point of view,²² but nevertheless they moderate any market power that an ISP might have towards content providers by virtue of their control of access to the end-user.

1.3.3. *Likelihood of abuse – Content provision level*

Having seen above that market power could perhaps arise (but not necessarily), the next question is whether there is likelihood that abusive practices would occur, such as could justify either sector-specific regulation or trigger the application of competition law.

As far as any content provider with significant market power is concerned, it could seek to obtain, from one or more ISPs, commitments²³ to exclude rival providers. Although this might be a profit-maximising strategy in specific circumstances, as a general proposition it is unclear why an ISP would agree to do so, since the ISP would thereby decrease the value of its platform in the eyes of end-users. Less drastically, a content provider in a variable QoS world might insist on having a QoS advantage over its rivals, but from the ISP's point of view, degrading the QoS of rival content in this way would be just as disadvantageous as excluding such content.

1.3.4. *Likelihood of abuse – ISP level*

²⁰ See also *infra*, headings 2.2.2. and 2.2.3.

²¹ Or at least cannot influence immediately.

²² Fixed and mobile access are not equivalent, access via the employer's network might be subject to restrictions.

²³ Or otherwise behave towards ISPs so as to achieve that goal, for instance by purchasing all or most available capacity at high-level QoS. Vertical integration by purchasing an ISP in order to exclude rival content providers appears very unlikely, given the costs involved for the content provider compared to the expected returns.

1.3.4.1. Towards users

The ISP could also seek to exploit a position of significant market power by charging excessive prices for a given level of QoS or excessively lowering the QoS in the default option.²⁴ This is only feasible if the ISP customers are captive (which is unlikely) and it depends on the elasticities of demand applying to the various services.

1.3.4.2. Towards content providers

For ISPs, the main concern voiced throughout the literature has centred around exclusionary practices that could follow from vertical integration into content provision, or the conclusion of exclusivity agreements whereby content providers would not deal with rival ISPs. This would lead to a situation whereby some content would only be available on a specific ISP. That would enable the ISP to enhance the attractiveness of its two-sided platform²⁵ at the expense of competing ISPs. The more desirable the content is ('must-see' content), the more attractive it would be for an ISP to have exclusivity on it. At the same time, for 'must-see' content, the upstream loss in revenue at content level from taking the content away from rival ISPs is certainly much greater than the downstream gain at ISP level, so that offering such content exclusively on one ISP makes little economic sense. Accordingly, the incentives for an ISP to seek content exclusivity are probably weak.

Beyond content exclusivity (and on the assumption that it would somehow make economic sense), the ISP might even want to exclude rival content and create a so-called 'walled garden', whereby its customers only have access to the content exclusive to the ISP.²⁶ The historical evidence is stacked against such an approach: content distribution has always tended to be done via distribution channels that offered the widest array of content, in line with the predictions from the economics of two-sided platforms.²⁷ Economically, this makes little sense either, to the extent that cutting off rival content providers leads to minimal savings upstream and is likely to cause a greater loss of revenue through the erosion of the downstream subscriber base, in view of the reduced attractiveness of the ISP's two-sided platform.

1.3.5. Conclusion on market power issues

On the basis of a summary competitive analysis, issues could arise at the content provision or the broadband access (ISP) level.

At the content provision level, market power could arise when a content provider holds 'must-have' content, yet such market power does not typically rest on a structural advantage such as a bottleneck. Should a content provider hold significant

²⁴ The latter hypothesis would turn the basic Internet into the famed 'dirt road' alluded to by proponents of network neutrality regulation.

²⁵ Note that an ISP could also voluntarily give preference to certain content, even in the absence of vertical integration, in order to enhance the attractiveness of its platform (i.e. 'the best-performing network for online games').

²⁶ In that sense, content distribution on the Internet would edge closer to the cable TV model.

²⁷ Think of bookstores and record stores. In more recent times, the efforts of AOL and CompuServe to offer walled gardens in the early days of the Internet were abandoned after it became clear that customers wanted no restrictions on access. Cable TV bucked the historical trend, but there the distributor has a total monopoly.

market power/dominance, it might seek to exclude rival content providers via exclusivity arrangements with ISPs, but it is unclear why an ISP would accept to enter into such an arrangement, which would reduce the attractiveness of its platform.

At the ISP level, significant market power could exist either vis-à-vis an ISP's own users (because these users can only access the Internet via their ISP) or vis-à-vis content providers (because they can only reach users via each user's ISP).

Vis-à-vis users, the ability of users to switch to another ISP acts as a brake on any market power on the part of the ISP.

Vis-à-vis content providers, one could think that the ISP is in a similar position as a terminating telecommunications operator (which is typically found to hold significant market power on the market for terminating communications to its subscribers). But this analogy is imperfect, since users typically access the Internet via many different routes: fixed broadband at home and at work, mobile access, wi-fi hotspots and others. Should there be market power, a widespread concern in the literature is that ISPs would integrate vertically into content or seek exclusivity deals, and then engage into discrimination against, or even blocking of traffic from, non-affiliated content providers. Yet ISPs have little economic incentive to do so.

2. THE REGULATORY RESPONSE IN THE USA

It will already have become apparent from the above that there is a link between the intensity of 'network neutrality' concerns and the competitiveness of the market(s) for broadband access (fixed, mobile or otherwise). To a large extent, the US administration – more specifically the FCC while under a Republican majority during the presidency of George W. Bush – gave urgency to the network neutrality debate in 2005. That year saw the lifting of the regulation of broadband access markets, in order to move to a strict infrastructure/platform competition approach, whereby a local duopoly of rival platforms based on cable and DSL would be pitted against each other, with mobile eventually joining as a competitive alternative. The reduction in the number of competitors on the broadband access market increased the risks related to network neutrality, as the FCC itself immediately recognized upon announcing its policy in 2005.²⁸

There is no room in this contribution to cover in detail the academic debate concerning network neutrality which took place throughout the 2000s in the USA. At the legal and regulatory level, legislative initiatives floundered before Congress. The two main antitrust authorities, the Federal Trade Commission (FTC) and the US Department of Justice, saw no ground for intervention beyond existing law, including

²⁸ *Appropriate Framework for Broadband Access to the Internet Over Wireline Facilities et al.*, CC Docket Nos. 02-33, 01-337, 95-20, 98-10, GN Docket No. 00-185, CS Docket No. 02-52, Policy Statement, 20 FCC Rcd 14986 (2005) (*Internet Policy Statement*).

antitrust law.²⁹ The sector-specific communications regulatory agency, the Federal Communications Commission (FCC), decided however to open regulatory proceedings on network neutrality, with a Notice of Proposed Rulemaking in 2009.³⁰

On 21 December 2010, following lengthy proceedings, the FCC released its *Open Internet Order*.³¹ In this Order, the FCC sets out three basic principles that broadband ISPs are bound to follow:

- *transparency*, including in particular disclosure of “network management practices” and performance characteristics of their services;
- *‘no blocking’ principle*, which applies differently to fixed and mobile ISPs. Fixed ISPs are prevented from blocking any lawful content or non-harmful device, whereas mobile ISPs are prevented only from blocking lawful websites or applications which compete with their own services;
- *‘no unreasonable discrimination’ principle*, here only for fixed ISPs, whereby they may not unreasonably discriminate in transmitting lawful traffic.

While, at such a level of generality, these principles may look unobjectionable, upon closer examination a number of concerns become apparent. First of all, there is the fundamental issue of the basis upon which the FCC is acting,³² where the *Open Internet Order* oscillates between technological and economic approaches. Secondly and depending on the outcome of this fundamental issue, discrimination can have many meanings, as reflected in the second and third principles. Thirdly, the FCC makes an exception to these principles for ‘reasonable network management’ measures, which must be defined. Fourthly, the FCC makes another exception for ‘specialized services’, which may undermine the whole scheme of the *Open Internet Order*. Each of these concerns is examined in turn.

2.1. The FCC between technology and economics

Throughout this paper, network neutrality has been analyzed primarily from an economic perspective. Given the rapid pace of changes in the ICT sector, a technology-based analysis could prove unsustainable over time, and it could also pre-empt technological choices which belong properly to consumers, in the light of what

²⁹ For the FTC, see the FTC Staff Report *Broadband Connectivity Competition Policy* (27 June 2007), available on www.ftc.gov. The position of the FTC seems to have evolved in recent years: compare with the more recent remarks of Chairman Leibowitz at the FCC Workshop on Consumers, Transparency and the Open Internet (19 January 2010), also available on www.ftc.gov, where he lends some support to the actions of the FCC. As for the DoJ, it filed ex parte comments before the FCC in 2007, before the FCC launched the *Open Internet* proceedings, urging caution and restraint, while asserting the applicability of antitrust law to eventual problems (those comments are available on www.justice.gov/atr).

³⁰ *Preserving the Open Internet; Broadband Industry Practices*, GN Docket No. 09-191, WC Docket No. 07-52, Notice of Proposed Rulemaking, 24 FCC Rcd 13064 (2009) (Open Internet NPRM). This NPRM was expanded in 2010 with *Further Inquiry into Two under-Developed Issues in the Open Internet Proceeding*, GN Docket No. 09-191, WC Docket No. 07-52, Sept 1, 2010.

³¹ *Preserving the Open Internet; Broadband Industry Practices*, GN Docket No. 09-191, WC Docket No. 07-52, Report and Order, FCC 10-201 (21 December 2010) (Open Internet Order).

³² We leave aside here the very real issue of the *legal basis* for the FCC order, which has proven a serious hurdle for any FCC intervention ever since the FCC abdicated its Title II authority by classifying broadband Internet provision as an ‘information service’ in the course of its deregulation policy, completed in 2005.

innovative suppliers offer them.³³ Accordingly, it is sensible to rely on economics as much as possible, and to introduce technological categories in the analysis only if the benefits therefrom outweigh the costs.

In its *Open Internet Order*, the FCC is constrained by the Telecommunications Act 1996, which is based on technological categories. The FCC painted itself in a corner in 2005, when it had to fit its deregulatory intent (based on economic considerations) into the technology-based scheme of the Act. While it found that the broadband access market was competitive enough for regulation to be removed, in order to effectively translate this in policy it had to re-classify broadband access as an “information service”, as opposed to a “telecommunications service”, based on formalistic technological reasoning.

In the *Open Internet Order*, the FCC must be commended for its attempt to rely on economic analysis. The analysis could sometimes be more sophisticated: for instance, when answering the argument that end users can switch providers and thereby keep ISPs in check, the FCC does not mention that ISPs have situational monopoly power (along the lines of call termination).³⁴ Nevertheless, the FCC does remain stuck in technological categories. For instance, the whole *Order* is structured along the relationship between ‘broadband internet access service providers’ (ISPs for the purposes of this paper), ‘edge providers’ (a new category introduced to cover content, applications and service providers)³⁵ and end-users. The distinction between ISPs and edge providers, while it may be accurate at the moment, is itself a legacy from the *Computer* inquiries, where a line had to be drawn between monopoly and liberalized services. The FCC is correct in pointing that much innovation has come from edge providers, but this might just be a consequence of the prevailing legal framework at the time the Internet took off, when only the edges were open to competition. Similarly, with the rise of user-generated content, the distinction between edge providers and end-users is no longer so clear, from an economic perspective.

The FCC also decides to treat mobile and fixed broadband access differently, for a host of reasons, mostly technological.³⁶ Some industrial policy also comes to bear (mobile networks being in an earlier stage of development in the eyes of the FCC). Indeed from an economic perspective, the analysis carried out in the first part of this contribution should apply equally to fixed and mobile providers.³⁷

2.2. The definition of ‘unreasonable discrimination’

³³ This is how the principle of technological neutrality, as introduced in EU law in 2002, can be given meaning. It implies that legislation and regulation should be sustainable over time (not dependent on fast-changing technological categories) and should not pre-empt technological choices. See Ilse van der Haar, *The principle of technological neutrality: Connecting EC network and content regulation* (2008) and “Technological neutrality; what does it entail?” (TILEC Discussion Paper 2007-009), available on SSRN.

³⁴ *Open Internet Order*, *supra* note 31, para. 27. This analogy with termination is set out *supra*, heading 1.3.2.2.

³⁵ *Ibid.*, para. 20.

³⁶ *Ibid.*, para. 93-95.

³⁷ The main difference, which the FCC correctly points out, is that there is more competition for mobile broadband services than for fixed. Yet this does not affect the general discussion on the desirability of differentiated QoS, or the concerns related to market power arising from control over access to the end-user (by analogy with termination markets).

The conflict between economic and technological approaches is nicely illustrated in the treatment of discrimination.³⁸ Some proponents of network neutrality would prohibit any discrimination *between data packets*, meaning that ISPs would effectively be prevented from examining packets in order to determine if one or the other deserves prioritization under any priority rule. Only random drop of packets in case of congestion would satisfy this very broad non-discrimination rule.

In its *Open Internet Order*, the FCC does not go that far,³⁹ and instead adopts the following non-discrimination rule: “A person engaged in the provision of fixed broadband Internet access service [...] shall not unreasonably discriminate in transmitting lawful network traffic over a consumer’s broadband Internet access service”.⁴⁰ ISPs are therefore permitted to engage into discrimination as long as it is ‘reasonable’; recognizing the open-endedness of that standard, the FCC provides further guidance on the conditions under which discriminatory measures are more likely to be found reasonable:

- the measure is *transparent* to the end-user;
- the *end-user controls* the measure. The FCC therefore allows the introduction of differentiated QoS towards end-users;
- the measure is *use-agnostic*, meaning that it does not differentiate according to the choice made of the Internet as to which content, application or service to use.

The FCC specifies that any measure that would introduce differentiated QoS towards the edge providers is likely to constitute unreasonable discrimination.⁴¹

In contrast, the FCC could also have construed ‘reasonableness’ from the vintage point of competition law, so that it would have focused on the market power concerns set out above (linked to vertical integration and exclusivity) and left the desirability of differentiated QoS for another day. Here ‘unreasonable discrimination’ would be interpreted as discrimination *as between firms in a similar position, so as to produce an anti-competitive effect (i.e. exclude a competitor to the detriment of consumer welfare)*.⁴² The point of comparison is therefore not packets, not content, services or applications, but rather firms: two firms in the same position, i.e. requesting the same service (same capacity, same QoS level) must be treated without discrimination by the ISP with significant market power (or dominance). A difficulty here is that US antitrust law might not support extending a non-discrimination obligation to include in the comparison the ISP’s own operations, when they compete with those third-party firms. Nonetheless, the FCC could have found support in economics to make that extension in its *Open Internet Order*.⁴³ According to this interpretation of ‘unreasonable discrimination’, as long as all third-parties (and the ISP’s affiliated operations) can have access to the same differentiated QoS offerings on the same terms and conditions, no unreasonable discrimination would arise.

³⁸ *Ibid.*, para. 68 and ff.

³⁹ *Ibid.*, para. 77.

⁴⁰ *Ibid.*

⁴¹ *Ibid.*, para. 76.

⁴² See Articles 101(1)(d) and 102(c) TFEU.

⁴³ In addition, the FCC could have referred to EU competition law in support of its position. As seen *infra*, heading 3.2.1., it is common under EU competition law to extend the prohibition on discrimination by dominant firms also to discrimination as between third parties and the dominant firm’s own operations competing with these third parties.

In the *Open Internet Order*, the FCC refused to construe ‘unreasonable discrimination’ along those lines.⁴⁴ The FCC argued that the purposes of the *Order* “cannot be achieved by preventing only those practices which are demonstrably anticompetitive or harmful to consumers”.⁴⁵ Taken at face value, this statement is stunning; it is hard to imagine why the FCC would want to prohibit conduct which is not hurting consumers.⁴⁶ By construing ‘unreasonable discrimination’ in the *Open Internet Order* in technical terms, and more broadly than standard economic analysis under competition law would warrant, the FCC effectively but implicitly concluded that differentiated QoS offerings are undesirable, at least towards content providers.

2.3. Reasonable network management

The exception for ‘reasonable network management’ measures does not affect this conclusion. Effectively, the FCC subjects the assessment of network management measures to the same general test as discrimination (transparency, end-user control and use-agnosticism)⁴⁷. It adds that “a network management practice is reasonable if it is appropriate and tailored to achieving a legitimate network management purpose, taking into account the particular network architecture and technology of the broadband Internet access service”.⁴⁸ The legitimate purposes include network security and integrity, traffic unwanted by end-users and network congestion.

2.4. Specialized services

Finally, the FCC acknowledges that the *Open Internet Order* does not extend to what it calls “specialized services”.⁴⁹ These are defined as services – such as the ISP’s own VoIP or IPTV offerings – which are offered over the Internet access facilities of the ISP and in effect share capacity with the “open Internet”. These specialized services can accordingly be prioritized and offered with a better QoS. The FCC leaves them out, even if it is aware that such services can compete with services offered over the Open Internet – both for consumers and for capacity – and thereby undermine the whole regulatory scheme of the *Open Internet Order*.⁵⁰ Of course, the FCC reserves the possibility of finding that specialized service fall under the *Order* if they are a functional equivalent to the broadband Internet access services subject to the *Order* or if they are used to circumvent the *Order*. Nevertheless, this leaves a sizeable loophole in the *Order*. Here as well, the FCC is caught in its technological analysis and ignores

⁴⁴ *Ibid.* at para. 78.

⁴⁵ *Ibid.*

⁴⁶ A charitable explanation for the statement would be that the FCC finds that standard economic analysis is too static and wants to take greater account of dynamic efficiency. Then it would have been preferable to state that ‘anticompetitive conduct’ and ‘consumer harm’ cannot be assessed strictly from a static perspective.

⁴⁷ *Open Internet Order*, *supra* note 31, para. 87

⁴⁸ *Ibid.* at para. 82.

⁴⁹ *Ibid.* at para. 112 and ff. These were formerly known as “managed services” in the preceding NPRM, *supra*, note 30.

⁵⁰ Either by offering less consumer protection than the Open Internet or conversely by making the Open Internet offerings appear less attractive.

economics.⁵¹

2.5. Conclusion

In the *Open Internet Order*, the FCC disconnects regulation from market realities by creating the illusion that an array of definitions can somehow address a problem. In the specific case of ‘unreasonable discrimination’, ‘reasonable network management’ or ‘specialized services’, the FCC is essentially enshrining the *status quo* (best-effort routing) as the rule. It requires the ISPs to fit any deviation from best-effort routing (starting from simple network management measures to the introduction of differentiated QoS) within one of the available exceptions to the rule. In other words, innovations by ISPs are presumed undesirable unless they fit within *ex ante* categories.⁵² At first sight, this seems precisely the wrong approach to the regulation of innovative sectors. A preferable alternative would have been to allow innovations, whatever they may be, unless they fall within *ex ante* categories where they are likely harmful.

3. REGULATORY RESPONSE IN THE EU

There are a number of differences between the EU and the USA that explain why the network neutrality debate has not evolved in the same fashion on both sides of the Atlantic.

3.1. Market and policy differences between the USA and the EU

While it is too early to know how the introduction of differentiated QoS will unfold, there is a chance that it would go in different ways in the EU and the USA. In view of the consolidation which took place in the USA in recent years, not only is there more often than not a duopoly at local level, but the number of players at national level is very limited: the three surviving local incumbents⁵³ control more than 80% of telecom subscriptions nationally, and the leading five cable TV providers,⁵⁴ more than 70% of cable TV subscriptions. To this one must add four⁵⁵ national mobile providers, two of which are owned by incumbents in any event. These players are also active on the Internet backbone (the cloud) and thus belong to the core of the Internet. Going back to the three scenarios outlined in Part I, the USA are most likely to witness Scenario 1, where differentiated QoS is implemented on an end-to-end basis on each ISP’s own facilities.

⁵¹ By way of comparison, if the FCC had defined ‘unreasonable discrimination’ in line with standard economic analysis under competition law (at least under EU competition law) and abstained from exempting ‘specialized services’ from the *Order*, it would in practice have given ISPs an incentive to make all edge providers benefit from their innovations in network management and QoS. Instead, the *Order* more or less compels ISPs to stick to best-effort routing and reserve their improvements for specialized services.

⁵² To its discharge, the FCC mentions repeatedly that its rules are designed to allow it to have some leeway in assessing future developments.

⁵³ AT&T, Verizon and Qwest, which result from the re-merger of the entities which had been created when the old AT&T monopoly was split in 1982.

⁵⁴ Comcast, TimeWarner, Cox, Charter, Cablevision.

⁵⁵ Soon three if the AT&T/T-Mobile merger is approved.

In contrast, in the EU, at the local level there will tend to be more than two providers of fixed broadband⁵⁶ and up to four or five mobile operators.⁵⁷ While these players will typically be active in the whole of a Member State, at EU level broadband access provision remains essentially fragmented along national lines, even if every operator follows the same best-efforts model.⁵⁸ So there is limited hope of a single operator being able to offer end-to-end guarantees at a pan-European level.

In the EU, if Scenario 1 materializes, it will do so at Member State level. Such a scenario would create significant difficulties for content providers with global brand names or ambitions, who wish to attach a global QoS image to their services. In order to be able to offer a consistent QoS across the EU, they would have to enter into agreements with hundreds of ISPs in order to achieve the required QoS level for all potential end-users. This is a much more complicated proposition than in the USA.

Alternatively, Scenario 2 could be pursued at EU level. For instance, networks of ISPs could form to offer an EU-wide set of differentiated QoS products. It could also be that a layer of EU-level intermediaries emerges to deal with the various ISPs and offer a one-stop proposition to content providers. The agreements needed to achieve these networks or this one-stop consolidation could have anti-competitive effects, especially towards ISPs which would remain on the outside.

At the policy level, the EU has set on its own course with the 2002 regulatory framework. Contrary to the USA, the EU moved away from technology-based regulation towards technology-neutral, economics-based regulation.

When interpreted so as to give it the most meaning, technological neutrality implies that (i) legislation and regulation should be formulated so as to be sustainable in the face of technological evolution and (ii) technological choices should not be pre-empted by legislation or regulation, unless this is absolutely necessary.⁵⁹ For one, introducing in EU law a notion of ‘specialized services’ as opposed to some form of basic Internet access, defined in technological terms, would probably run counter to technological neutrality.

Another one of the key achievements of the 2002 regulatory framework has been to shift sector-specific regulation away from a technological towards an economic foundation, with the emphasis on market analysis, the three-criteria test for the selection of markets, the assessment of significant market power and the use of remedies borrowed from competition law.

Furthermore, policy choices on fundamental issues such as the balance between infrastructure- and service-based competition have differed across the Atlantic. The EU has not lifted local access regulation for broadband, contrary to what the US did in 2005. As a result, because of continuing bitstream and LLU regulation, broadband access markets tend to be more competitive in the EU, in the sense that a larger

⁵⁶ New entrants using their own networks, ULLs, bitstream or resale account for a significant portion of DSL subscriptions in the EU.

⁵⁷ Not including MVNOs and resellers.

⁵⁸ There is some consolidation in the mobile sector with a number of pan-European groups, but their operations remain broken down along national lines.

⁵⁹ See van der Haar, *supra* note 33.

number of competitors are typically active on each market. Keeping access markets competitive might be the best insurance policy against the need to intervene to address network neutrality concerns (with all the attendant risks).

So far, the EU institutions have chosen not to intervene frontally on network neutrality, contrary to what the FCC has done in the USA. A number of provisions touching upon network neutrality were introduced in EU electronic communications regulation in 2009, on the occasion of a broader review of that regulation. The most recent policy document issued by the Commission continues that line, whereby the Commission and the new Body of European Regulators in Electronic Communications (BEREC) study and monitor the situation before any further legislative or regulatory intervention is envisaged.⁶⁰

The following paragraphs review currently applicable EU law in the light of the concerns outlined in Part 1.

3.2. Market power issues under EU law

A number of issues relate to *abuses of market power*, when competitors are excluded as a result of vertical integration or exclusivity agreements between content providers and ISPs enjoying significant market power (or dominance). The impugned behaviour can consist in discrimination⁶¹ (not allowing competitors to benefit from the same QoS despite their willingness to pay) or blocking (either preventing affiliated content from being available via rival ISPs or preventing rival content from being available on the ISP in question).

3.2.1. EU Competition law

EU Competition law can apply in such cases. To the extent that the behaviour in question stems from a firm with significant market power and that it has an anti-competitive effect,⁶² it will be prohibited under Article 102 TFEU (abuse of a dominant position). The use of discriminatory terms and conditions as between third parties is expressly listed as an example of abuse at Article 102(c) TFEU. Indeed, the ECJ has interpreted Article 102 TFEU to also prohibit discrimination, in a vertical context such as this, as against third parties in order to favour the dominant firm's own operations.⁶³ As for outright blocking, to the extent that there were pre-existing dealings (i.e. the content used to be available on the ISP in question), Article 102 TFEU will also apply to prevent an unjustified termination of such dealings.⁶⁴ If the behaviour takes place within the framework of an agreement between a content

⁶⁰ *The open internet and net neutrality in Europe*, COM (2011)222 (19 April 2011).

⁶¹ The precise meaning of discrimination in the content of network neutrality is discussed *infra*, Question 8.

⁶² See Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings [2009] OJ C 45/7.

⁶³ ECJ, Case C-333/94P, *Tetra Pak* [1996] ECR I-5951; Gen Ct, Case T-229/94, *Deutsche Bahn* [1997] ECR II-1689.

⁶⁴ See most recently on this, ECJ, C-468/06, *Sot. Lélos kai Sia* [2008] ECR I-7139. Given the current state of affairs (best-efforts and universal connectivity), it is most likely that the content used to be available on the ISP in question. However, in the absence of any previous dealings, the case-law on essential facilities would apply (see Gen Ct, Case T-201/04, *Microsoft* [2007] ECR II-3601), whereby a refusal to deal would violate Article 102 TFEU only under exceptional circumstances.

provider and an ISP and market power is present, Article 101 TFEU could also apply.⁶⁵ There is already some Commission decision practice concerning the award of exclusivity over ‘must-have’ content such as sports rights⁶⁶ (in addition to specific regulation on events of major importance to society⁶⁷). Finally, in the most extreme situation, vertical integration via a merger between an ISP and a content provider could be prohibited under the MCR,⁶⁸ provided that the parties are able and have an incentive to engage into input or customer foreclosure.⁶⁹

If the abuse is *exploitative* rather than exclusionary, for instance excessive prices for the available QoS level, Article 102 TFEU might also apply, albeit that the test for exploitative abuses is not clear, so that such abuses have not been investigated very often.

3.2.2. Sector-specific regulation – SMP regime

In addition, *sector-specific regulation* can be used to complement and bolster competition law. Electronic communications regulation contains a specific regime for operators that hold significant market power (SMP).⁷⁰ That regime would allow to impose prohibitions on non-discrimination and on blocking upon ISPs holding SMP.⁷¹ However, as a pre-condition to the application of the SMP regime, a relevant market must have been defined and selected, either by the Commission in its Recommendation on relevant markets⁷² or by a National Regulatory Authority (NRA) of its own motion.⁷³ As was mentioned before, in cases where discrimination or blocking could be a concern, the market power of ISPs would come from their position as the gateway to their end-users, when seen from the perspective of content providers. The market analysis would roughly follow that of call termination on fixed or mobile networks. However, no such ‘market for the termination of broadband data traffic (delivery of content) from the Internet backbone to the end-user’ has been

⁶⁵ See generally Regulation 330/2010 on the application of Article 101(3) TFEU to categories of vertical agreements and concerted practices [2010] OJ L 102/1 and the Guidelines on Vertical Restraints [2010] OJ C 130/1.

⁶⁶ See COMP/C.2/37.398, *Champions League* [2003] OJ L 291/25, COMP/C.2/37.214, *Bundesliga* [2005] OJ L 134/46 and COMP/38.173, *Premier League* [2008] OJ C 7/18.

⁶⁷ Pursuant to Art. 14 of Directive 2010/13 (Audiovisual Media Services Directive) [2010] OJ L 95/1, Member States may regulate the conditions under which events of major importance to society are broadcast. These provisions only apply to broadcasting, however, and not to other modes of content distribution.

⁶⁸ Regulation 139/2004 on the control of concentrations between undertakings (the EC Merger Regulation) [2004] OJ L 24/1.

⁶⁹ See generally the Guidelines on the assessment of non-horizontal mergers under the Merger Regulation [2008] OJ C 265/6.

⁷⁰ Directive 2002/21 (Framework Directive) [2002] OJ L 108/33, Art. 14-16.

⁷¹ These types of remedies are covered by Articles 10 (non-discrimination) and 12 (access) of Directive 2002/19 (Access Directive) [2002] OJ L 108/7, as amended.

⁷² The current one being the Recommendation of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation [2007] OJ L 344/65.

⁷³ NRAs must then seek the approval of the Commission for their market definition (Directive 2002/21, Art. 7(4)). They must show how the market meets the three-criteria test used by the Commission to select markets in its Recommendation: *ibid.*, para. 2.

identified, much less included in the Recommendation.⁷⁴ In the light of the rough competitive analysis made above under Part I, that market might not meet the three-criteria test. More specifically, the second criteria (no prospect of effective competition) might not be met. In line with our competitive analysis, there is no need to add a market to the Recommendation now, but should significant problems arise, that option is available.

Similarly, as for *exploitative* abuses towards end-users, no relevant market has been selected for analysis under the provisions of the Universal Service Directive.⁷⁵ This reflects the widespread view that the provision of Internet access services by ISPs to end-users is either already competitive or made competitive through wholesale remedies such as local loop unbundling and bitstream access.

3.2.3. *Sector-specific regulation – general provisions on transparency, minimum QoS and interconnection*

Sector-specific regulation could nevertheless help to make market mechanisms work, as has already been recognized in the recent review of electronic communications regulation. In 2009, the Universal Service Directive (2002/22) has been amended to increase *transparency*. Increased transparency will help end-users steer the retail Internet access market better, by ensuring that they have the information to factor QoS issues in their choice of ISP. It can also help content providers in their dealings with ISPs (to the extent that they deal directly with them for end-to-end QoS, i.e. that Scenarios 1 or 2 above have materialized). Should transparency obligations fail, the Universal Service Directive now also empowers NRAs to set out *minimum QoS* requirements, as mentioned in the Questionnaire.

Beyond that, should blocking become too prevalent (contrary to what the rough competitive analysis made above would indicate), the Access Directive can also be used to uphold the principle now set out in the Framework Directive that end-users should be able to access and distribute information or run applications and services of their choice.⁷⁶ Indeed Article 5(1) of the Access Directive empowers NRAs to order operators controlling access to end-users to interconnect and make their services interoperable (irrespective of whether they hold SMP or not). Article 5 could play a large role in the unlikely event that the Internet would become ‘patchy’ because too many ISPs are each blocking their respective set of contents, applications or services.

3.2.4. *The human rights dimension*

In the whole debate on network neutrality, one type of practice – blocking, as in Madison River and Comcast – has met with near-unanimous disapproval and has quickly enflamed the debate. More than anything, the thought of no longer being able to access services, content and applications of one’s choice across the Internet mobilized support in favour of network neutrality rules.

⁷⁴ In 2003, the first Recommendation included a market for ‘broadcasting transmission services’ which covered the transmission of content over electronic communications services (but following a broadcasting model). That market was dropped from the list in the 2007 Recommendation, since according to the Commission it was generally competitive throughout the EU.

⁷⁵ Directive 2002/22 (Universal Service Directive) [2002] OJ L 108/51, Art. 17.

⁷⁶ Directive 2002/21, Art. 8(4)(g).

In principle, the introduction of differentiated QoS without any blocking does not prevent the flow of traffic across the Internet and therefore does not affect freedom of expression, pluralism or diversity. Of course, with differentiated QoS, it is possible that some content would be available only with a lower QoS level, but this does not mean it is unavailable at all.

By the same token, many users might be relatively indifferent to the QoS level they receive, for instance because they use applications which are relatively insensitive to QoS, such as e-mail or websites containing mostly written information. These users will however be affected by blocking.

Accordingly, it will come as no surprise that the new policy objective introduced at Article 8(4)(g) of the Framework Directive in 2009 is more specifically directed at blocking with its goal of 'promoting the ability of end users to access and distribute information or run applications and services of their choice'.

3.3. EU Law and the desirability of differentiated QoS in general

On the *fundamental issue of whether differentiated QoS should be allowed* at all, there is definitely a risk for the internal market, namely that the Internet would be broken down along national lines and that content providers would not be able to pursue an EU-wide QoS strategy given too much diversity in the QoS offerings from ISPs.

In the EU, there is every reason to monitor closely the development of differentiated QoS. So far, the Internet has proven a massive boost for the internal market, because it made cross-border communication so easy, since all operators use the same standardized technology.⁷⁷ If differentiated QoS is introduced by way of proprietary solutions for each ISP, there is a risk that (i) the spread of differentiated QoS offerings will be slower in the EU than elsewhere due to the large number of ISPs which large content providers must deal with⁷⁸ and (ii) the Internet will gain a more national flavour, with variation in QoS offerings along national lines. There is no guarantee that ISPs will spontaneously move to reduce that risk along the lines of Scenario 2, and even then Scenario 2 could have anti-competitive implications.

Some form of standardization or harmonization would be an appropriate response should the risk of internal market fragmentation become too large. The Framework Directive contains the requisite procedural framework for dealing with such issues.⁷⁹ The EU and Member State institutions must be very careful to limit their role to nudging the industry on this, as opposed to prescribing specific technical solutions.

3.4. Institutional resources

⁷⁷ The standardization efforts underpinning the Internet took place to a large extent via private standardization organizations, some of them relatively informal. That does not affect their significance.

⁷⁸ Of course, there are far fewer network equipment and software vendors than ISPs, so in principle even if each ISP implements differentiated QoS on a proprietary basis, the diversity of implementations will be constrained by the number of available solutions from those vendors.

⁷⁹ Directive 2002/21, Art. 17.

All in all, it can be seen that, together with competition law, the current regulatory framework is already sufficient in substance to address the concerns outlined previously. In the EU, the real issue is not so much substantive law as institutional resources.

At this point in time, given that competition law is the main substantive vehicle with which to address the most pressing concerns, enforcement would fall primarily on the shoulders of the competition authorities, i.e. the national competition authorities (NCAs), the Commission and the national courts.

All of these authorities have jurisdiction over the whole of the economy, and they rely primarily (NCAs or Commission) or entirely (national courts) on complaints or lawsuits by competitors or customers. In all likelihood, they will be short of resources to address the market power issues identified above if contrary to expectations significant problems were to arise. Furthermore, these authorities are not concerned with the internal market issues identified above (in addition to the market power issues).

Accordingly, institutional resources – preferably at sector-specific (NRA) level – should be specifically devoted to the monitoring of potential abuses of market power by content providers or ISPs or fragmentation of the internal market. This would also ensure that public authorities possess the requisite level of information and knowledge to assess whether heavier intervention is needed and, as the case may be, to carry it out.

4. CONCLUSION: TOWARDS A GLOBAL DISCUSSION OF NETWORK NEUTRALITY

The table on the following page sums up the conclusions of the preceding parts of this contribution.

Overview of network neutrality concerns and regulatory responses in the USA and the EU

Concern	Response in USA				Response in EU			
	Perception	Urgency	Antitrust	Regulation	Perception	Urgency	Competition	Regulation
Shorter term								
Network management	++	++	+	Only reasonable network management allowed	++	+	++	Transparency
Longer term								
Differentiated QoS - in general (desirability)	++	++	N/A	Likely prohibited towards edge providers (with exceptions); allowed towards end-users, subject to transparency and no-blocking	+	o	N/A	None; monitoring
- fragmentation	o	o	N/A	none	o	o	N/A	None
Market power								
Of content providers	+	o	+	none	+	o	++	None
Of ISPs - towards users	++	+	o	Transparency	+	+	++	Transparency; minimum QoS if necessary
- towards content providers: -- blocking	+	++	+	Included in no blocking principle	+	+	++	None; monitoring
--discrimination	+	++	+	Included in no unreasonable discrimination	+	+	++	None; monitoring

Perception: extent to which regulatory authorities (FCC, European Commission, NRAs) perceive and understand the concern
 Urgency: level of urgency attributed to the concern by regulatory authorities
 Antitrust/Competition: availability of antitrust or competition law to deal with the concern
 Regulation: description of sector-specific regulatory response (*Open Internet Order*, revised EU directives)

As regards perceiving and understanding concerns, whilst authorities on both sides of the Atlantic have a good view of the shorter-term network management issues, the European Commission has not reached the level of understanding of the longer-term issues displayed by the FCC in its *Open Internet Order* when it looked at the need for intervention.⁸⁰ Neither authority has yet caught on to the fragmentation concern (although that concern does not arise with the same urgency in the USA). As for market power, perhaps because it takes a negative view of differentiated QoS in general, the FCC is less sophisticated in its analysis of the market power of ISPs, missing out on how ISPs can exert market power towards content providers (the termination analogy), for instance. As for the European Commission, even if it should have the tools (from its experience in the electronic communications sector) to understand market power problems fully, it has not yet reached that stage.

With it comes to urgency, it is obvious from the *Open Internet Order* and the years of debate leading up to it that the FCC perceives that the issue requires urgent attention (a point of view which is not necessarily shared by US competition authorities). Nonetheless, in its *Order*, the FCC does not seem to consider that protecting users against the market power of ISPs has a high priority, perhaps again because it takes such a dim view of differentiated QoS and adopts such wide-ranging prohibitions on blocking and discrimination. The third column (availability of antitrust law) might provide a clue on why the FCC is so pressed to act. Certainly when compared to EU competition law, US antitrust law cannot apply so readily to network neutrality concerns: it is hampered by a reluctance to intervene in the terms and conditions which dominant firms grant to their competitors, even in vertical integration settings.⁸¹ When compared to the FCC, the European Commission seems less pressed to act. As mentioned before, EU infrastructure policy has kept broadband access markets more competitive overall, which reduces the acuity of network neutrality concerns. Furthermore, EU competition law is more likely to find application against conduct such as blocking or discrimination by a dominant ISP.

In the end, the FCC chose to intervene more heavily on network neutrality, while the European Commission advocated limited changes to the EU electronic communications directives and active monitoring of further development. Taking into account the explanations given in the previous two paragraphs, the two sides of the Atlantic are not so far apart when it comes to the shorter-term and the market power concerns. The main contrast between the two has been in the general analysis of longer-term concerns: in its *Open Internet Order*, the FCC comes to the conclusion that the introduction of differentiated QoS – at least towards content providers – is not desirable on balance, and it puts the onus on ISPs to justify any move away from best-efforts traffic management. The FCC does leave ample room for justification, however, with its exceptions for reasonable network management, specialized services and the less onerous treatment of mobile broadband access providers. In contrast, the European Commission seems – in the absence of explicit statements – to

⁸⁰ *Open Internet Order*, *supra* note 31 at para. 11 and ff.

⁸¹ See the impulse given by the US Supreme Court in *Verizon Communications v. Trinko* 540 U.S. 398 (2004) and *Pacific Bell v. linkLine Communications* 555 U.S. ___ (Docket No. 07-512, 25 February 2009).

consider that the longer-term threat is not so large as to warrant a radical intervention at an early stage in the process. Accordingly, intervention in the name of network neutrality is the exception rather than the rule in the EU so far.

At a more fundamental level, the FCC analysis is a mix of technological and economic considerations, whereas the European Commission follows the general principles of EU electronic communications law, i.e. reliance on economic analysis and technological neutrality. Irrespective of the outcome of their respective analyses, it seems that the EU approach should be preferred globally. Indeed there is no point in casting legacy US distinctions such as that between ‘broadband internet access service providers’ and ‘edge providers’ in stone. The internet has greatly benefited from innovation at the edges, but the past does not predict the future: sophisticated technologies like P2P could probably evolve better in a context where ISPs and content providers both contribute to innovation.

In the coming years, network neutrality will continue to emerge as a global issue, as other jurisdictions carry out their own debate,⁸² and a more global discussion starts to take place.

At the outset, as the example of the USA and the EU already shows, the various jurisdictions can differ in their regulatory approach. As a starting point, this could be workable: after all, as the above comparison showed, the respective analyses of the FCC and the European Commission are influenced by factors which are specific to each jurisdiction (market situation, infrastructure policy, role and availability of antitrust/competition law, balance between technological and economic considerations in sector-specific regulation). Nevertheless, they do manage to reach similar outcomes on many of the issues (shorter-term issues, market power issues). Yet the basic policy difference on the longer-term concern – whether the introduction of differentiated QoS is desirable at all – might be too consequential to leave unaddressed.

At global level, if some jurisdictions (say, Group A) approach differentiated QoS as an exception to a general network neutrality rule, whereas others (Group B) allow it to be introduced subject to some safeguards, externalities might arise. Indeed, in Group B, content providers (or edge providers in FCC parlance) will be paying for whatever QoS level suits their business strategy, if and once differentiated QoS is introduced. If those content providers active in Group B happen to come from Group A, then the difference in policy between Group A and Group B leads to a transfer of resources from Group A to Group B, since content providers from Group B are not similarly required to pay ISPs from Group A for a definite QoS level. In concrete terms, as between the USA and the EU, the current policy divergence will generate a net transfer from US-based content providers (Apple, Google, etc.) to EU-based ISPs.⁸³ While this is not harmful as such, such imbalances are of course at the root of many

⁸² In addition, there is a risk, set out above, that the EU discussion will spin off in national debates, as is happening already in the Netherlands: see *supra* note 4.

⁸³ In any event, considering that global content providers are mostly US-based, there would have been a payment imbalance between the USA and the EU even if both jurisdictions had agreed on policy.

trade disputes.

More importantly, neither the USA nor the EU have yet fully reckoned with the risk of fragmentation which is bound with the introduction of differentiated QoS by individual ISPs. The US authorities might be forgiven, considering that they oversee one large integrated jurisdiction, but the EU authorities should wake up to this concern. At the global level, the risk of fragmentation is greater: within the EU at least, there is a shared policy core, and market players tend to be linked with one another (through ownership, contract or industry associations). Globally, policymakers have fewer incentives to cooperate or emulate each other. Furthermore, there is greater diversity among the markets, and thus firms could very well implement differentiated QoS with a larger degree of variation than within the EU. This could make it very difficult for content providers to operate globally, thereby depriving users worldwide of one of the main global benefits of the current best-efforts, IP-based Internet. In such a case, international standardization fora (including the ITU) or the WTO could be involved to solve coordination problems at the technical or regulatory level, respectively.